



## MATERIAL SAFETY DATA SHEET

1. We would like to inform our customers that these batteries are exempt articles and are not subject to the 29 CFR 1910.1200 OSHA requirement, or to the Canadian WHMIS requirements and the sheets are supplied as a service to you. For other MSDSs and related information, visit: <http://www.rayovac.com/customer/msds/msds.shtml>.
- 2. THESE BATTERIES ARE NOT BE SUITABLE FOR LANDFILL DISPOSAL (SEE SECTION 7).**

### 1. IDENTIFICATION

PRODUCT NAME: Silver Oxide Batteries

SIZES: All

EMERGENCY TELEPHONE NUMBER: 800-424-9300 (24 hr, Chemtrec)

Environmental Health & Safety Information: 262-523-9000

EDITION DATE: 03/01/2004

APPROVED BY: Kevin J. Domack

### 2. INGREDIENTS

INGREDIENT NAME	CAS #	%	TLV*
Silver	7440-22-4	<0.5	0.1 mg/m <sup>3</sup> (Metal, TWA)
Steel	7439-89-6	37 – 41	--
Zinc	7440-66-6	30 – 40	2 mg/m <sup>3</sup> (ZnO, Fume, TWA)
Potassium Hydroxide	1310-58-3	1 – 3	C 2 mg/ m <sup>3</sup> (STEL)
Graphite	7782-42-5	<0.25	2 mg/ m <sup>3</sup> (TWA)
Mercury	7439-97-6	<0.9**	0.025mg/ m <sup>3</sup> (Inorganic, TWA)
Manganese Dioxide	1313-13-9	<2.5	0.2 mg/ m <sup>3</sup> (Mn, TWA)
Water, paper, plastic, other	---	Balance	---

\*Source: ACGIH Threshold Limit Values for Chemical Substances and Physical Agents, 2003.

\*\* All Silver Oxide cells contain less than 25 mg/cell of mercury.

### 3. PHYSICAL DATA

Boiling Point @ 760 mm Hg (°C):	NA
Vapor Pressure (mm Hg @ 25°C):	NA
Vapor Density (Air = 1):	NA
Density (grams/cc):	NA
Percent Volatile by Volume (%):	NA
Evaporation Rate (Butyl Acetate = 1):	NA
Physical State:	NA
Solubility in Water (% by Weight):	NA
pH:	NA
Appearance and Odor:	geometric solid object

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## 4. FIRE & EXPLOSION HAZARD DATA

FLASH POINT: NA LOWER (LEL): NA

FLAMMABLE LIMITS IN AIR (%): NA UPPER (UEL): NA

EXTINGUISHING MEDIA: Use water, foam or dry powder, as appropriate.

AUTO-IGNITION: NA

SPECIAL FIRE FIGHTING PROCEDURES: As with any fire, wear self-contained breathing apparatus to avoid inhalation of hazardous decomposition products (See section 2).

SPECIAL FIRE EXPLOSION HAZARDS: Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of flammable or corrosive materials.

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## 5. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE (TLV) AND SOURCE: NA

EFFECTS OF OVEREXPOSURE: None. (In fire or rupture situation see section 2 and section 4)

EMERGENCY FIRST AID PROCEDURES:

***Skin and Eyes:***

In the event that battery ruptures, flush exposed skin with copious quantities of flowing lukewarm water for a minimum of 15 minutes. Get immediate medical attention for eyes. Wash skin with soap and water.

***Swallowing:***

Ingestion of a battery can be harmful. Call The National Capital Poison Control Center (202-625-3333 – COLLECT) or your local Poison Control Center (800-222-1222), day or night - for advice and follow-up.

For more information, visit: <http://www.nema.org/batteriesehs>.

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## 6. REACTIVITY DATA

STABLE OR UNSTABLE: Stable

INCOMPATIBILITY (MATERIALS TO AVOID): NA

HAZARDOUS DECOMPOSITION PRODUCTS: NA

DECOMPOSITION TEMPERATURE (0°F): NA

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: Avoid electrical shorting.

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## 7. SPILL OR LEAK PROCEDURES

PROCEDURES TO CONTAIN AND CLEAN UP LEAKS OR SPILLS: In the event of a battery rupture, prevent skin contact and collect all released material in a plastic lined metal container.

REPORTING PROCEDURE: Report all spills in accordance with Federal, State and Local reporting requirements.

WASTE DISPOSAL METHOD: Reclaim or dispose of in an approved, secured landfill after required pretreatment, per Federal, State and Local disposal requirements. For additional information on disposal or recycling options, visit: [http://www.rayovac.com/about/environmental/e\\_faq.shtml](http://www.rayovac.com/about/environmental/e_faq.shtml).

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## 8. PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE): NA

<u>VENTILATION:</u>	Local Exhaust:	NA
	Mechanical (General):	NA
	Special:	NA
	Other:	NA

PROTECTIVE GLOVES: NA

EYE PROTECTION: NA

OTHER PROTECTIVE CLOTHING: NA

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## 9. SPECIAL PRECAUTIONS

HANDLING AND STORAGE: Store in a dry place. Storing unpackaged cells together could result in cell shorting and heat build-up.

TRANSPORTATION-SHIPPING: These are "batteries, dry" and are not considered to be a "hazardous material" per the Dept. of Transportation (USDOT) regulations or "dangerous goods" per the International Air Transport Association (IATA) regulations. Shipments must comply with the general duty clause of USDOT 49 CFR 172.102 (a) (1) special provision 130, "to prevent shorting potential while transporting."

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## 10. SARA 313

Notification is not required because these products are article(s) that do not release a covered toxic chemical under the normal conditions of processing or use.

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NOTICE: The information and recommendations set forth are made in good faith and are believed to be accurate at the date of preparation. Rayovac Corporation makes no warranty expressed or implied.